

Climate Change Adaptation Advisory Committee

Presentation Title: Climate Change Adaptation Advisory Committee Public Information Sessions

Thursday, 4 June 2009 4:00 PM - 6:00 PM MassDEP - Central 627 Main Street Worcester, MA	Wednesday, 24 June 2009 4:00 pm - 6:00 pm Town Council Office 367 Main Street Hyannis, MA 02601	Tuesday, 30 June 2009 4:00 pm - 6:00 pm MassDEP - Northeast 205B Lowell Street Wilmington, MA 01887
Wednesday, 1 July 2009 4:00 pm - 6:00 pm Springfield Public Library 220 State Street Springfield, MA 01103	Thursday, 2 July 2009 4:00 pm - 6:00 pm MassDEP - Southeast 20 Riverside Drive Lakeville, MA 02347	Wednesday, 15 July 2009 3:00 pm - 5:00 pm Minehan Auditorium Hurley Building 19 Staniford Street Boston, MA 02114
Thursday, 16 July 2009 5:00 pm - 7:00 pm Dudley Branch Library 65 Warren Street Boston, MA 02119		

The following presentation is offered for discussion purposes only and does not necessarily represent current statute, regulation, or policy positions of the Commonwealth of Massachusetts unless specifically acknowledged.

CLIMATE CHANGE ADAPTATION

Advisory Committee

Executive Office of Energy and
Environmental Affairs
June – July, 2009



TOPICS

- Global Warming Solutions Act
- Global Trends
- Northeast Specific Trends
- Climate Change Adaptation Advisory Committee
 - Charge
 - Structure
 - Timeline



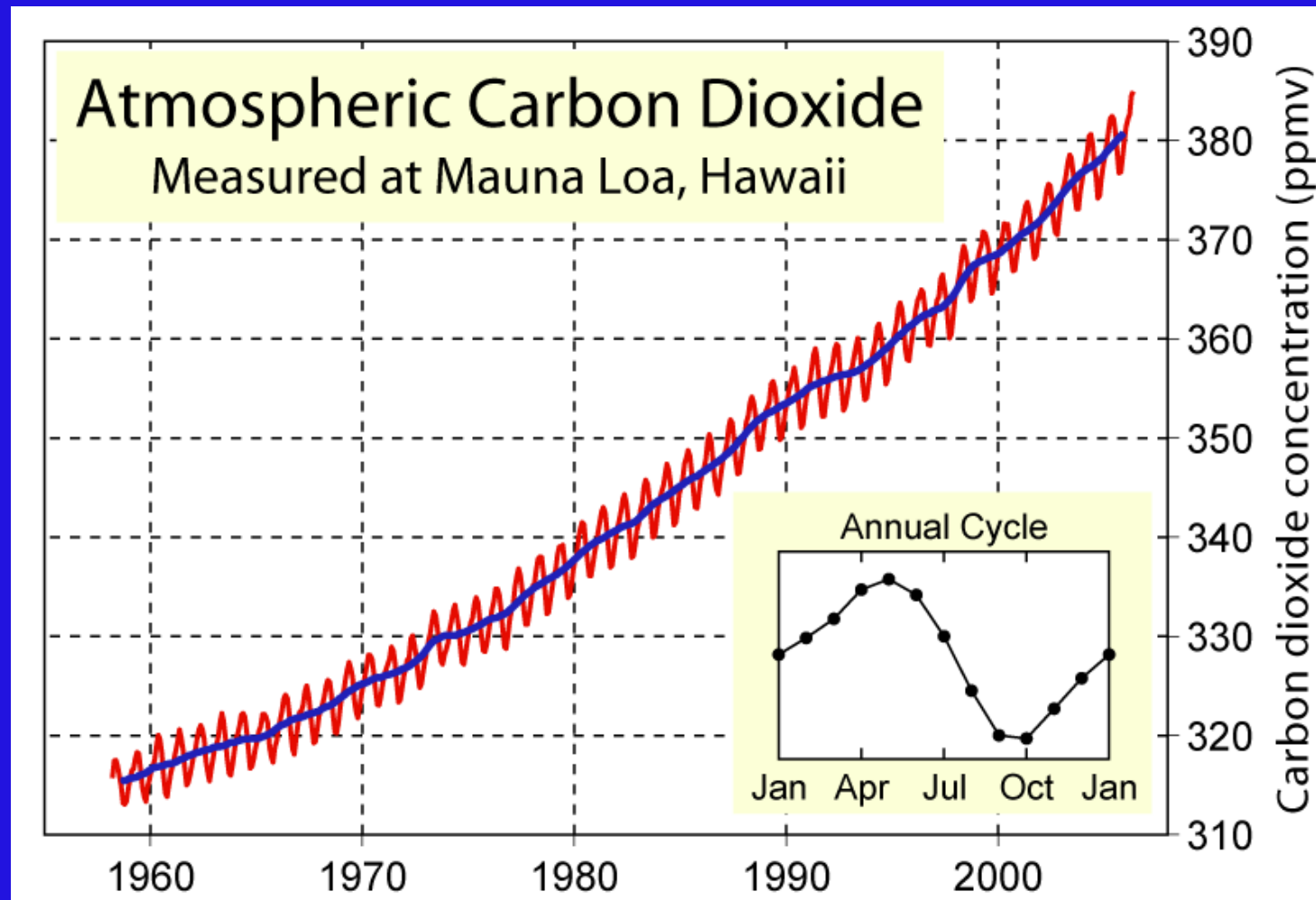
Charge to Advisory Committee

Section 9 of Global Warming Solutions Act

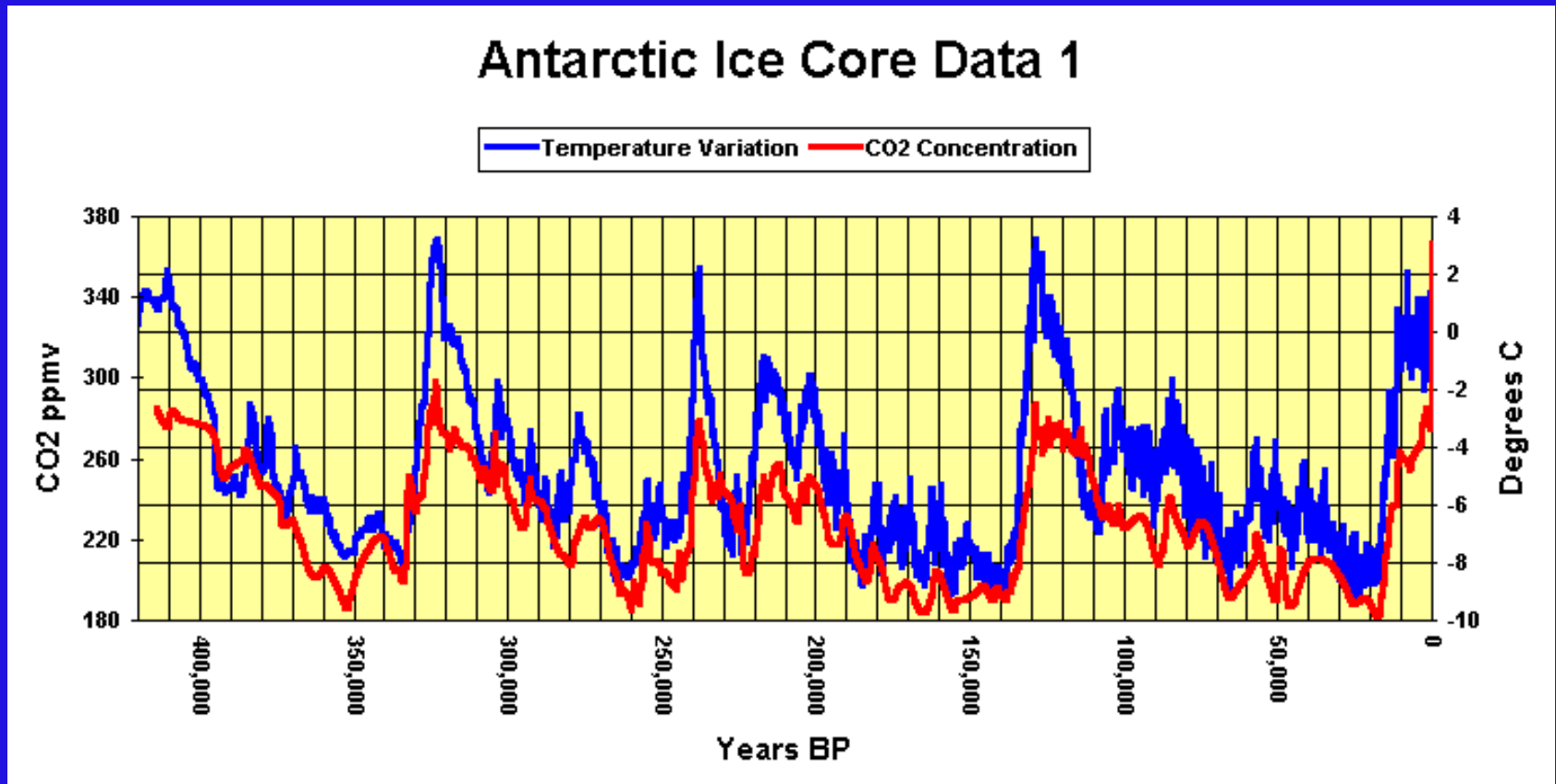
- **Define and assess potential vulnerabilities** due to the predicted impacts
- **Evaluate strategies** for adapting to the predicted effects of climate change



Concentrations of Atmospheric CO₂ are Increasing

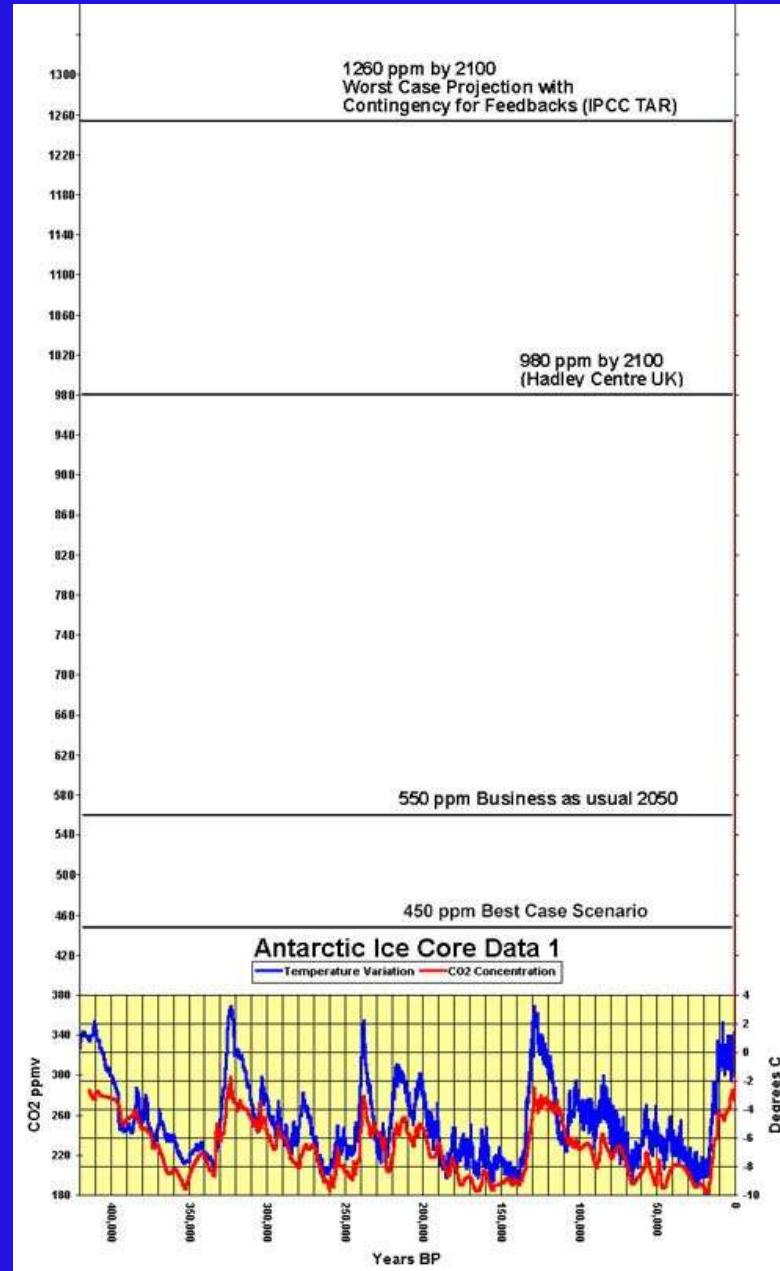


Historical CO₂ and Temperature are Correlated

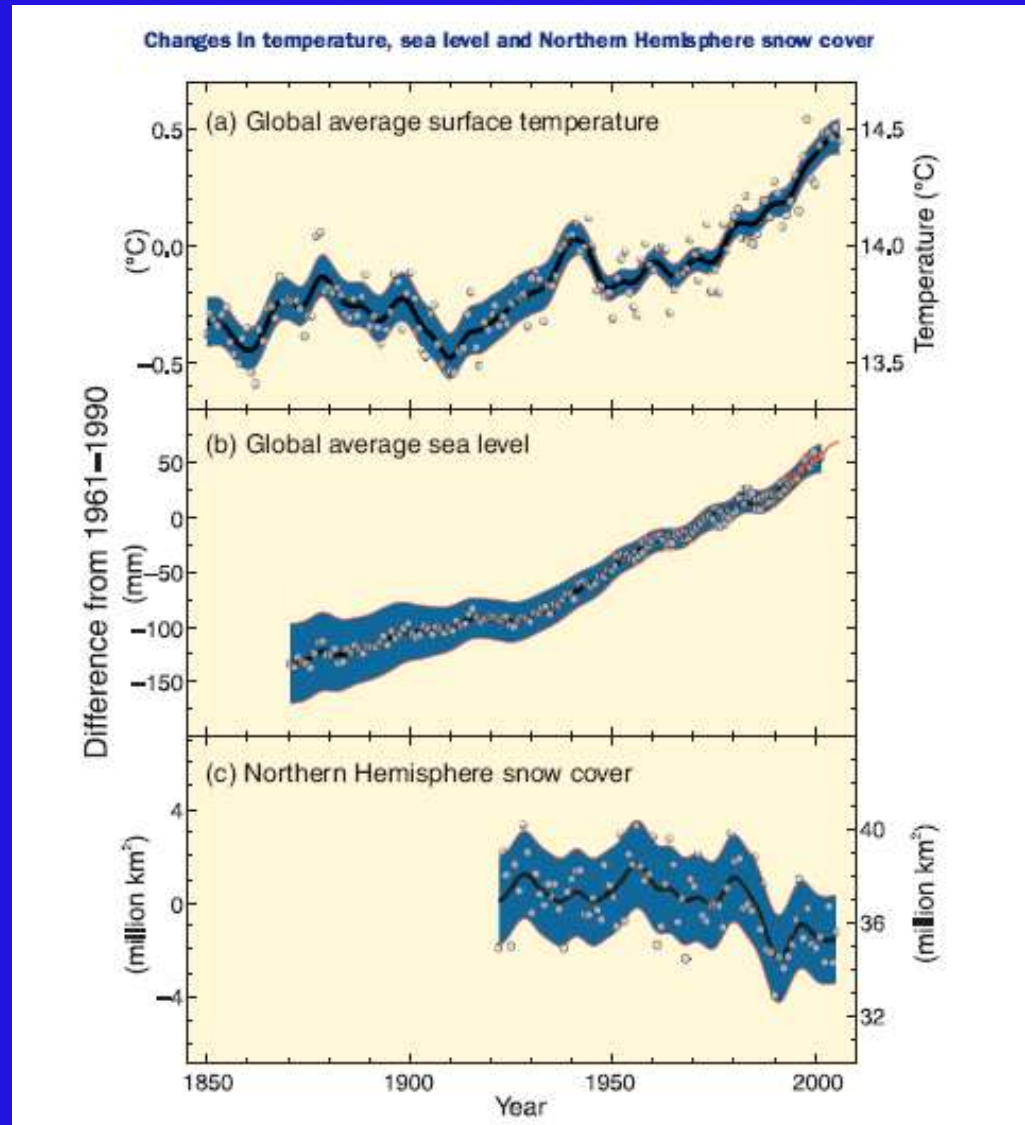


Based on: Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. 1999. Petit J.R., Jouzel J., Raynaud D., Barkov N.I., Barnola J.M., Basile I., Bender M., Chappellaz J., Davis J., Delaygue G., Delmotte M., Kotlyakov V.M., Legrand M., Lipenkov V.M., Lorius C., Pépin L., Ritz C., Saltzman E., Stievenard M. Nature 399: 429-436.

We are entering uncharted territory



From global warming to climate change



Source: An Assessment of the Intergovernmental Panel on Climate Change

This summary, approved in detail at IPCC Plenary XXVII (Valencia, Spain, 12-17 November 2007), represents the formally agreed statement of the IPCC concerning key findings and uncertainties contained in the Working Group contributions to the Fourth Assessment Report.

http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf

Observed NORTHEAST Climate Impacts

- Warmer annual temperatures - up 2°F since 1970
- Warmer winters – up 1.3°F per decade since 1970
- Decreasing winter snowpack
- Earlier flowering plants
- More frequent extreme summer heat



Predicted NORTHEAST Climate Impacts

Parameter	Current (1961-1990)	Predicted Range of change by 2100
Temperature (° C)	7.8	10 to 13
Precipitation (cm)	102.9	108 to 117
Sea level rise (cm)	8	21 to 201
Streamflow-spring peak flow (days)	84.5	72 to 80
Droughts lasting 1-3 months (#/30 yrs)	12.61	16 to 23
Snow Days/Month (days)	5.2	1 to 4
Length of growing season (days)	184	196 to 227

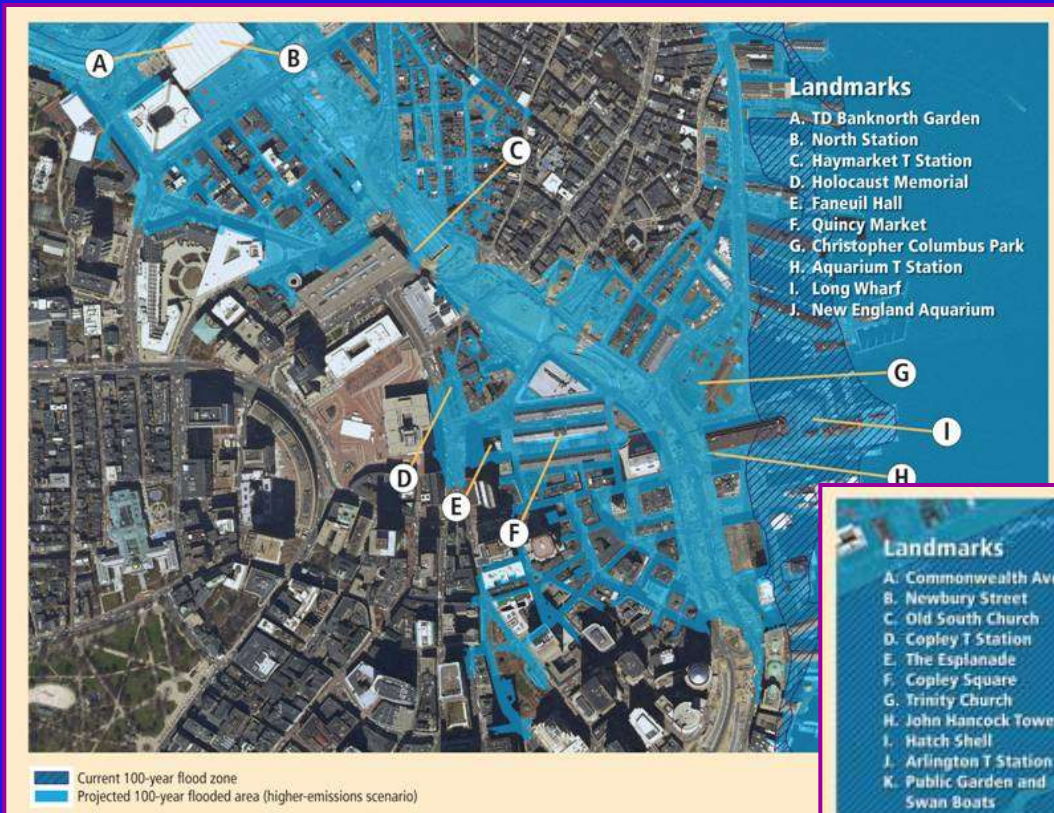


Example: Water

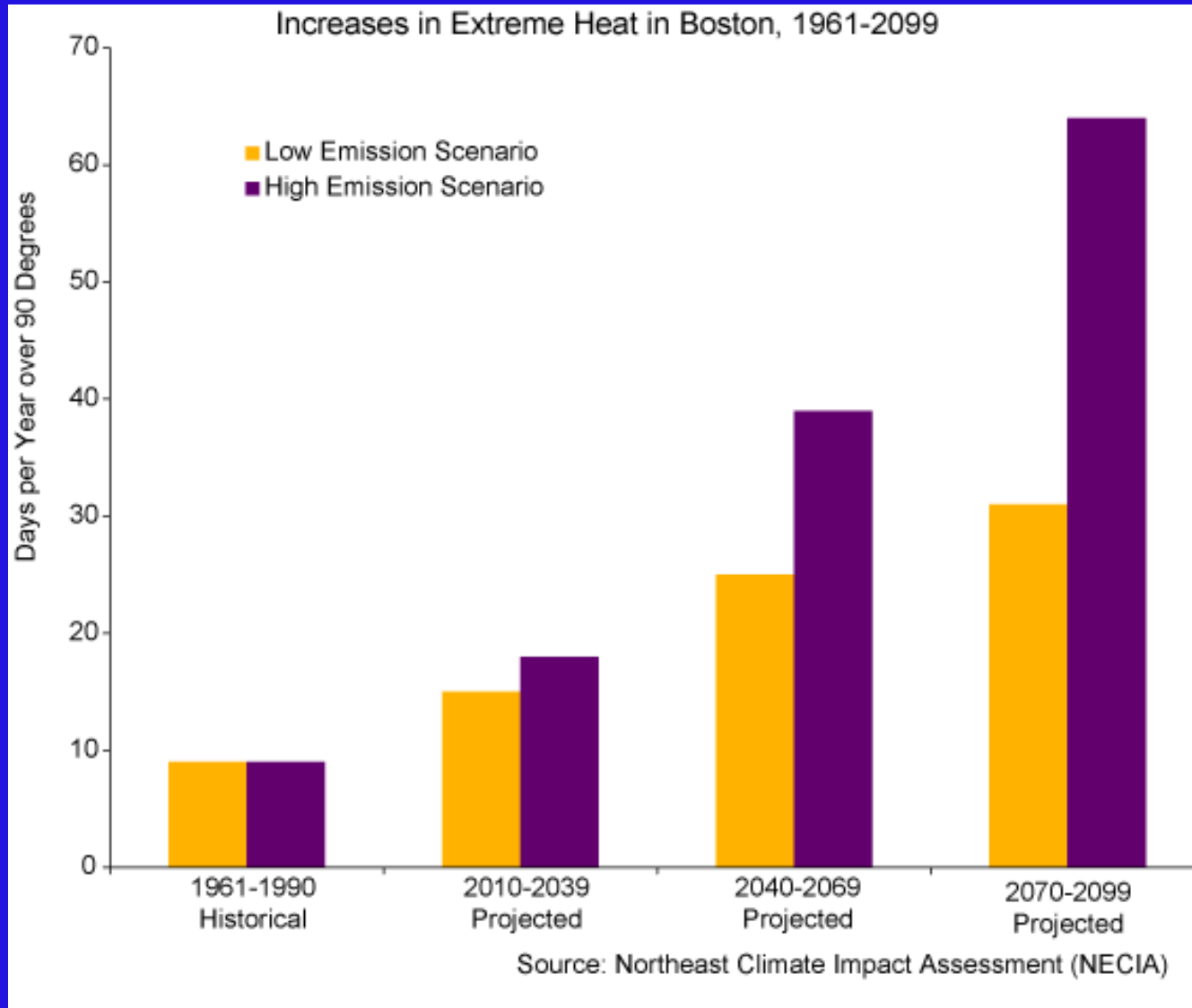
- Altered timing/amount of streamflow due to reduced snowpack
- Increased winter precipitation as rain
- Increased frequency of short-term droughts
- Warmer water temperatures – less dissolved oxygen
- Increased frequency of extremely hot days and subsequent water demand
- Increased likelihood and size of damaging rainstorms
- Significant erosion and damage due to storm surge



Example: Potential Coastal Flooding



Example: Extreme Heat Days



Examples: Forests, Fisheries, Agriculture, Tourism, Health

- Maple, beech and birch shift 350-500 miles north
- Lobster and cod shift to northern Gulf of Maine
- Insect and tree diseases flourish in warmer temps
- More infectious and vector-borne diseases, (esp. in vulnerable populations)
- More weeds and pests
- Impact on tourism (seaside infrastructure and properties, winter snow related activities)



Composition of Advisory Committee

- transportation and built infrastructure
- commercial, industrial and manufacturing activities;
- low income consumers
- energy generation and distribution
- land conservation
- water supply and quality
- recreation
- ecosystems dynamics
- coastal zone and oceans
- rivers and wetlands
- local government
- also public health, insurance, forestry, agriculture, public safety



Adaptation Subcommittees

- Local Economy
- Natural Resources and Habitat
- Human Health and Welfare
- Key Infrastructure
- Coastal Zone and Oceans



Timeline

- Full Advisory Committee Meetings
June 4, July 30, September 9, October 20
- Sub-Committee Meetings
June – August
- Report to the Legislature
December 31, 2009



Contact Information

Website

<http://www.mass.gov/dep/public/committee/ccaac.htm>

Project Manager

Kathleen Baskin, Director of Water Policy

Kathleen.Baskin@state.ma.us

Staff

Vandana Rao: vandana.rao@state.ma.us

John Clarkeson: john.clarkeson@state.ma.us

